



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
Fax 613 632-5246

646.3510

Job Sheet 200987



Part No: 646.3510

Job Qty: 20 pcs

Part Name: Strut



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/20/19

Job Tracking No:

Due Date: 10/21/19

Created By: Jennifer Renwick

Type: Stock

Description:

Note: DWG REV N/C 3 IPP REV:A 12.10.19 NEW ISSUE DD VERF:JLM

Ship Via:

## Bill of Materials

## Job Routing

| Op No | Operation           | Qty       | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off    |
|-------|---------------------|-----------|------------|----------|-----------|---------|-----------------------|-----------|-------------|
|       |                     |           |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time |             |
| 110   | Waterjet - Flow - 1 | 20<br>pcs |            | 10/21/19 | 0.17      | 0.79    | Waterjet - Flow       |           | ac 19/10/02 |
| 120   | QC 2                | 20<br>pcs |            | 10/21/19 | 0.00      | 0.00    | QC 2 - 1              |           |             |
|       |                     |           |            |          |           |         | QC 2 - 12             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 14             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 17             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 19             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 2              |           |             |
|       |                     |           |            |          |           |         | QC 2 - 20             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 22             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 23             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 25             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 32             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 33             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 35             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 39             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 4              |           |             |
|       |                     |           |            |          |           |         | QC 2 - 40             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 44             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 45             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 48             |           | ac 19/10/02 |
|       |                     |           |            |          |           |         | QC 2 - 49             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 50             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 51             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 52             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 57             |           |             |
|       |                     |           |            |          |           |         | QC 2 - 62             |           |             |



Dart Aerospace Ltd.  
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CANADA  
TEL: 1 613 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com

Container No: S218952



Part: 646.3510

Job No: 200987

Serial No/Batch: S218952

Revision:

Inspector:

Exp Date:

Instructions: Various STC's

Date: 10/07/19

Plex 9/20/19 10:02 AM Dart.Renwick.Jennifer

|                               |           |          |           |  |                                   |      |
|-------------------------------|-----------|----------|-----------|--|-----------------------------------|------|
|                               |           |          |           |  | QC 2 - 63                         |      |
|                               |           |          |           |  | QC 2 - 8                          |      |
|                               |           |          |           |  | QC 2 - 66                         |      |
|                               |           |          |           |  | QC 2 - 64                         |      |
|                               |           |          |           |  | QC 2 - 65                         |      |
|                               |           |          |           |  | QC 2 - 5                          |      |
|                               |           |          |           |  | QC 2 - 71                         |      |
|                               |           |          |           |  | QC 2 - 73                         |      |
|                               |           |          |           |  | QC 2 - 69                         |      |
|                               |           |          |           |  | QC 8 - 12                         |      |
|                               |           |          |           |  | QC 8 - 14                         |      |
| 130 QC 8                      | 20<br>pcs | 10/21/19 | 0.00 0.00 |  | QC 8 - 17                         |      |
|                               |           |          |           |  | QC 8 - 20                         |      |
|                               |           |          |           |  | QC 8 - 25                         |      |
|                               |           |          |           |  | QC 8 - 3                          |      |
|                               |           |          |           |  | QC 8 - 32                         |      |
|                               |           |          |           |  | QC 8 - 33                         |      |
|                               |           |          |           |  | QC 8 - 35                         |      |
|                               |           |          |           |  | QC 8 - 39                         |      |
|                               |           |          |           |  | QC 8 - 4                          |      |
|                               |           |          |           |  | QC 8 - 44                         |      |
|                               |           |          |           |  | QC 8 - 45                         |      |
|                               |           |          |           |  | QC 8 - 49                         |      |
|                               |           |          |           |  | QC 8 - 58                         |      |
|                               |           |          |           |  | QC 8 - 8                          |      |
|                               |           |          |           |  | QC 8 - 9                          | DAS  |
|                               |           |          |           |  | QC 8 - 68                         | 40   |
|                               |           |          |           |  | QC 8 - 67                         | 9-89 |
|                               |           |          |           |  | QC 8 - 1 (A)                      |      |
|                               |           |          |           |  | QC 8 - 47                         |      |
|                               |           |          |           |  | QC 8 - 40                         |      |
|                               |           |          |           |  | QC 8 - 52                         | DAS  |
|                               |           |          |           |  | QC 8 - 23                         | 81   |
|                               |           |          |           |  | QC 8 - 57                         | 9-89 |
|                               |           |          |           |  | QC 8 - 76                         |      |
|                               |           |          |           |  | QC 8 - 61                         |      |
| 140 Large Fab - Welded Assy-1 | 20<br>pcs | 10/21/19 | 0.00 8.00 |  | Large Fab - 1 - B4B               |      |
|                               |           |          |           |  | Large Fab - 10 - B4B              |      |
|                               |           |          |           |  | Large Fab - 2 - B4B               | MV   |
|                               |           |          |           |  | Large Fab - 3 - B4B               |      |
|                               |           |          |           |  | Large Fab - 4 - B4B               |      |
|                               |           |          |           |  | Large Fab - 5 - B4B               |      |
|                               |           |          |           |  | Large Fab - 6 - B4B               |      |
|                               |           |          |           |  | Large Fab - 7 - B4B               |      |
|                               |           |          |           |  | Large Fab - 8 - B4B               |      |
|                               |           |          |           |  | Large Fab - 9 - B4B               |      |
|                               |           |          |           |  | Large Fab - 11 - B4B<br>(Various) |      |
| 150 QC 5                      | 20<br>pcs | 10/21/19 | 0.00 0.00 |  | QC 5 - 10                         |      |
|                               |           |          |           |  | QC 5 - 12                         |      |
|                               |           |          |           |  | QC 5 - 17                         |      |
|                               |           |          |           |  | QC 5 - 18                         |      |
|                               |           |          |           |  | QC 5 - 19                         |      |
|                               |           |          |           |  | QC 5 - 22                         |      |
|                               |           |          |           |  | QC 5 - 24                         |      |

|     |                               |           |          |      |      |                                |            |
|-----|-------------------------------|-----------|----------|------|------|--------------------------------|------------|
|     |                               |           |          |      |      | QC 5 - 3                       |            |
|     |                               |           |          |      |      | QC 5 - 43                      |            |
|     |                               |           |          |      |      | QC 5 - 49                      |            |
|     |                               |           |          |      |      | QC 5 - 51                      |            |
|     |                               |           |          |      |      | QC 5 - 58                      |            |
|     |                               |           |          |      |      | QC 5 - 68                      |            |
|     |                               |           |          |      |      | QC 5 - 9                       |            |
|     |                               |           |          |      |      | QC 5 - 50                      | EL         |
|     |                               |           |          |      |      | QC 5 - 30                      |            |
|     |                               |           |          |      |      | QC 5 - 40                      |            |
|     |                               |           |          |      |      | QC 5 - 61                      |            |
|     |                               |           |          |      |      | QC 5 - 81                      |            |
| 160 | Large Fab - Welded Assy-2-B4B | 20<br>pcs | 10/21/19 | 0.00 | 6.67 | Large Fab - 1 - B4B            |            |
|     |                               |           |          |      |      | Large Fab - 10 - B4B           |            |
|     |                               |           |          |      |      | Large Fab - 2 - B4B            | MV         |
|     |                               |           |          |      |      | Large Fab - 3 - B4B            |            |
|     |                               |           |          |      |      | Large Fab - 4 - B4B            |            |
|     |                               |           |          |      |      | Large Fab - 5 - B4B            |            |
|     |                               |           |          |      |      | Large Fab - 6 - B4B            |            |
|     |                               |           |          |      |      | Large Fab - 7 - B4B            |            |
|     |                               |           |          |      |      | Large Fab - 8 - B4B            |            |
|     |                               |           |          |      |      | Large Fab - 9 - B4B            |            |
|     |                               |           |          |      |      | Large Fab - 11 - B4B (Various) |            |
| 170 | QC 9                          | 20<br>pcs | 10/21/19 | 0.00 | 0.00 | QC 9 - 10                      |            |
|     |                               |           |          |      |      | QC 9 - 18                      |            |
|     |                               |           |          |      |      | QC 9 - 24                      |            |
|     |                               |           |          |      |      | QC 9 - 43                      |            |
|     |                               |           |          |      |      | QC 9 - 50                      | EL         |
|     |                               |           |          |      |      | QC 9 - 9                       |            |
|     |                               |           |          |      |      | QC 5 - 10                      |            |
| 180 | QC 5                          | 20<br>pcs | 10/21/19 | 0.00 | 0.00 | QC 5 - 12                      |            |
|     |                               |           |          |      |      | QC 5 - 17                      |            |
|     |                               |           |          |      |      | QC 5 - 18                      |            |
|     |                               |           |          |      |      | QC 5 - 19                      |            |
|     |                               |           |          |      |      | QC 5 - 22                      |            |
|     |                               |           |          |      |      | QC 5 - 24                      |            |
|     |                               |           |          |      |      | QC 5 - 3                       |            |
|     |                               |           |          |      |      | QC 5 - 43                      |            |
|     |                               |           |          |      |      | QC 5 - 49                      |            |
|     |                               |           |          |      |      | QC 5 - 51                      |            |
|     |                               |           |          |      |      | QC 5 - 58                      |            |
|     |                               |           |          |      |      | QC 5 - 68                      |            |
|     |                               |           |          |      |      | QC 5 - 9                       |            |
|     |                               |           |          |      |      | QC 5 - 50                      | CL         |
|     |                               |           |          |      |      | QC 5 - 30                      |            |
|     |                               |           |          |      |      | QC 5 - 40                      |            |
|     |                               |           |          |      |      | QC 5 - 61                      |            |
|     |                               |           |          |      |      | QC 5 - 81                      |            |
| 220 | Spray Paint - 2 - B4B         | 20<br>pcs | 10/21/19 | 0.00 | 0.74 | Spray Paint - 1 - B4B          |            |
|     |                               |           |          |      |      | Spray Paint - 2 - B4B          | RD 19-10-8 |
|     |                               |           |          |      |      | Spray Paint - 3 - B4B          |            |
|     |                               |           |          |      |      | Spray Paint - 4 - B4B          |            |
| 230 | QC 14                         | 20<br>pcs | 10/21/19 | 0.00 | 0.00 | QC 14 - 15                     |            |
|     |                               |           |          |      |      | QC 14 - 2                      |            |

|     |                             |    |          |           |                        |             |
|-----|-----------------------------|----|----------|-----------|------------------------|-------------|
|     |                             |    |          |           | QC 14 - 34             |             |
|     |                             |    |          |           | QC 14 - 41             |             |
|     |                             |    |          |           | QC 14 - 51             |             |
|     |                             |    |          |           | QC 14 - 58             |             |
|     |                             |    |          |           | QC 14 - 59             |             |
|     |                             |    |          |           | QC 14 - 9              |             |
|     |                             |    |          |           | QC 14 - 68             |             |
|     |                             |    |          |           | QC 14 - 40             |             |
|     |                             |    |          |           | QC 14 - 19             |             |
|     |                             |    |          |           | QC 14 - 43             |             |
|     |                             |    |          |           | QC 14 - 24             | DAS         |
|     |                             |    |          |           | QC 14 - 61             | 81          |
|     |                             |    |          |           | QC 14 - 81             | 9-89        |
|     |                             |    |          |           |                        | OCT 08 2019 |
|     |                             |    |          |           |                        |             |
| 240 | Packaging 3-1 - Stock - B4B | 20 | 10/21/19 | 0.00 0.00 | Packaging 3 - 1 - B4B  |             |
|     | pcs                         |    |          |           | Packaging 3 - 2 - B4B  |             |
|     |                             |    |          |           | Packaging 3 - 3 - B4B  |             |
|     |                             |    |          |           | Packaging 3 - 4 - B4B  |             |
|     |                             |    |          |           | Packaging 3 - 5 - B4B  |             |
|     |                             |    |          |           | Packaging 3 - 6 - B4B  |             |
|     |                             |    |          |           | Packaging 3 - 7 - B4B  |             |
|     |                             |    |          |           | Packaging 3 - 8 - B4B  |             |
|     |                             |    |          |           | Packaging 3 - 9 - B4B  |             |
|     |                             |    |          |           | Packaging 3 - 10 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 11 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 12 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 13 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 14 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 15 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 16 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 17 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 18 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 19 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 20 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 21 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 22 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 23 - B4B | Pc CCK103   |
|     |                             |    |          |           | Packaging 3 - 24 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 25 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 26 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 27 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 28 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 29 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 30 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 31 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 32 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 33 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 34 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 35 - B4B |             |
|     |                             |    |          |           | Packaging 3 - 36 - B4B |             |
| 250 | QC 21 - SA                  | 20 | 10/21/19 | 0.00 0.00 | QC 21 - SA - 21        | DAS         |
|     | pcs                         |    |          |           | QC 21 - SA - 70        | 21          |
|     |                             |    |          |           | QC 21 - SA - 53        | 9-89        |
|     |                             |    |          |           |                        | OCT 10 2019 |

Part Op 110 - 1-Cut 646.3500 plate 2.75"x 1.50" as per Dwg Prog Rev: N/C 3 2-Deburr if necessary  
 Descriptions: 120 - (QC2- Inspect parts off machine FAI/FAIB)  
 130 - (QC8- Inspect parts - second check)

140 - 1- Fabricate tube as per dwg USE DT10290 PUNCH

150 - (QC5- Inspect part completeness to step on W/O)

160 - Weld tube to plate as per dwg. DT9867 Weld end were tube is punch.

M136585 Batch #

170 - (QC9- Inspect visual per QSI004- Fusion Welds)

180 - (QC5- Inspect part completeness to step on W/O)

220 - Prime as per dwg (see note 3) Batch: 5195271

230 - (QC14- Inspect Spray Paint)

240 - (Identify as per dwg &amp; Stock Location: \_\_\_\_\_) \*\*\*IDENTIFY AS PER APICAL MPP-120 BY STAMPING THE P# AND REV\*\*\*

250 - (QC21- Final Inspection - Work Order Release)

## Job BOM

| Part / Item      | Component Name              | Quantity             | Operation                     | Container       |
|------------------|-----------------------------|----------------------|-------------------------------|-----------------|
| M304S16GA        | 304/316 Sheet .063          | .5560 sf (.0278 ea)  | 110-Waterjet - Flow - 1       | S207058         |
| M304TR0.500W.049 | 304 Round Tube .500 X .049W | 16.6600 ft (.833 ea) | 140-Large Fab - Welded Assy-1 | 5126572/5133773 |

## Job Allocations

| Operation                     | Component Part   | Required | Inventory | Allocated |
|-------------------------------|------------------|----------|-----------|-----------|
| 110-Waterjet - Flow - 1       | M304S16GA        | 1        | 461       | 0         |
| 140-Large Fab - Welded Assy-1 | M304TR0.500W.049 | 17       | 84        | 0         |

## Part Specifications

| Spec No | Description | Target/Tolerance    | Limits         | Type | Special Comments |
|---------|-------------|---------------------|----------------|------|------------------|
| 1       | Strut       | 2.750Inches ± 0.030 | 2.780<br>2.720 |      |                  |
| 2       | Strut       | 1.500Inches ± 0.030 | 1.530<br>1.470 |      |                  |
| 3       | Strut       | 0.063Inches ± 0.010 | 0.073<br>0.053 |      |                  |

Plex 9/20/19 10:02 AM Dart.Renwick.Jennifer

|                                                                      |                         |                                     |                       |                     |                  |
|----------------------------------------------------------------------|-------------------------|-------------------------------------|-----------------------|---------------------|------------------|
| <b>APICAL</b><br>INDUSTRIES, INC.                                    |                         | ENGINEERING CHANGE NOTICE NO. 04274 |                       | SHEET 1 OF 1        |                  |
|                                                                      |                         | DWG NO. 646.3500                    | REV: NC               | PREPARED BY J. SOTO | DATE: 12/02/2013 |
| DWG TITLE: STRUT                                                     |                         |                                     |                       |                     |                  |
| APPROVED BY:                                                         | ENGR <i>[Signature]</i> | MFG <i>[Signature]</i>              | QC <i>[Signature]</i> | EFF.                | NEXT ORDER       |
| REASON: REVISED DELTA NOTE 1 & 2.                                    |                         |                                     |                       |                     |                  |
| TRANSACTION CODES (IC):<br>A-ADD<br>R-REVISE<br>C-CREATE<br>D-DELETE |                         |                                     |                       |                     |                  |

## SHEET 1, ZONE A1 IS:

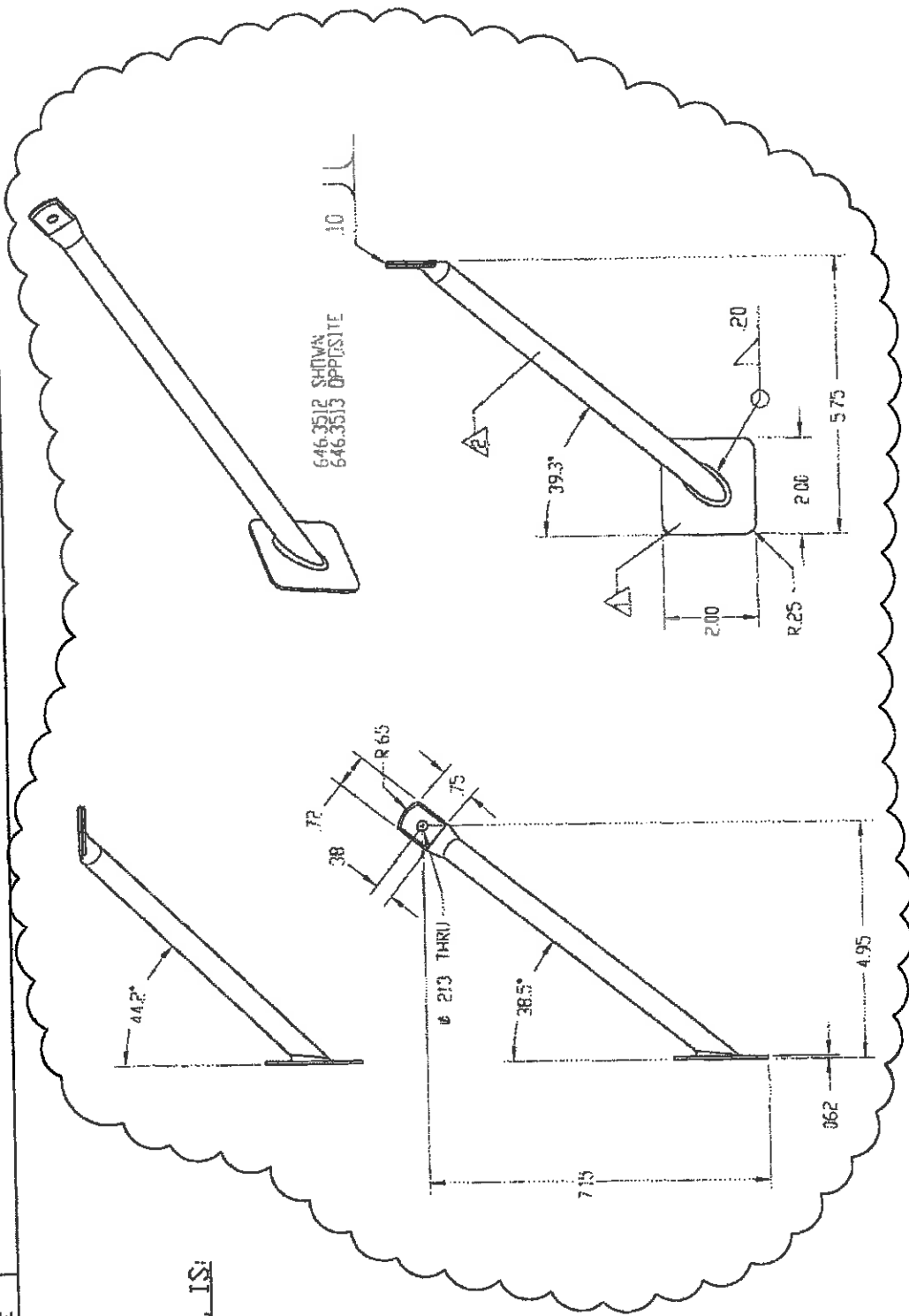
- NOTES:**
- 1 MATERIAL: AISI 304/ 316 SS SHEET .062 THK  
(REF DART SPEC. M304S16GA)
  - 2 MATERIAL: AISI 304/316 SS 0.500 OD X 0.049 WALL  
(REF DART SPEC. M304TRO.500W0.049)  
ENSURE SEAMLESS TUBE IS USED
  - 3 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2  
COLOR BLACK;  
CARDINAL 4860-50 PRETREATMENT PRIMER  
PRIME IAW MIL-P-23377J TYPE I CLASS N
4. DEBURR AND BREAK ALL SHARP EDGES
  5. WELDS IAW MIL-STD-2219.  
TIG WELD WITH FILLER ROD

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 200987

|                     |                              |                                               |                              |                              |                              |                 |                                |                                           |                     |                              |                                        |
|---------------------|------------------------------|-----------------------------------------------|------------------------------|------------------------------|------------------------------|-----------------|--------------------------------|-------------------------------------------|---------------------|------------------------------|----------------------------------------|
| DOCUMENTS EFFECTED: | <input type="checkbox"/> MDL | <input type="checkbox"/> INSTALL INSTRUCTIONS | <input type="checkbox"/> ICA | <input type="checkbox"/> FMS | <input type="checkbox"/> BOM | CHANGE CATEGORY | <input type="checkbox"/> MAJOR | <input checked="" type="checkbox"/> MINOR | DER REVIEW REQUIRED | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
|---------------------|------------------------------|-----------------------------------------------|------------------------------|------------------------------|------------------------------|-----------------|--------------------------------|-------------------------------------------|---------------------|------------------------------|----------------------------------------|

|                                                                 |                         |                                                                                           |                 |
|-----------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------|-----------------|
| ENGINEERING CHANGE NOTICE NO. 02197                             |                         | SHEET 1 OF 1                                                                              |                 |
| APICAL INDUSTRIES, INC.                                         |                         | EFFECT ON DWG<br><input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC. |                 |
| DWG NO. 646.3500                                                | REV: N/C                | PREPARED BY S. HUFF                                                                       | DATE: 01/05/09  |
| DWG TITLE: STRUT                                                |                         |                                                                                           |                 |
| APPROVED BY: ENGR. <i>[Signature]</i>                           | MFG. <i>[Signature]</i> | QC <i>[Signature]</i>                                                                     | EFF. NEXT ORDER |
| REASON: REVISED ANGLE OF 646.3512 & 646.3513 FOR BETTER PAYMENT |                         |                                                                                           |                 |
| TRANSACTION CODES (TC)<br>A-ADD C-CREATE R-REVISE D-DELETE      |                         |                                                                                           |                 |

SHEET 2 OF 2



|                     |                              |                                  |                                  |                              |                              |                              |                 |                                |                                           |                     |                              |                                        |
|---------------------|------------------------------|----------------------------------|----------------------------------|------------------------------|------------------------------|------------------------------|-----------------|--------------------------------|-------------------------------------------|---------------------|------------------------------|----------------------------------------|
| DOCUMENTS EFFECTED: | <input type="checkbox"/> MDL | <input type="checkbox"/> INSTALL | <input type="checkbox"/> INSTRUC | <input type="checkbox"/> ICA | <input type="checkbox"/> FMS | <input type="checkbox"/> BOM | CHANGE CATEGORY | <input type="checkbox"/> MAJOR | <input checked="" type="checkbox"/> MINOR | DER REVIEW REQUIRED | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
|---------------------|------------------------------|----------------------------------|----------------------------------|------------------------------|------------------------------|------------------------------|-----------------|--------------------------------|-------------------------------------------|---------------------|------------------------------|----------------------------------------|

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

7

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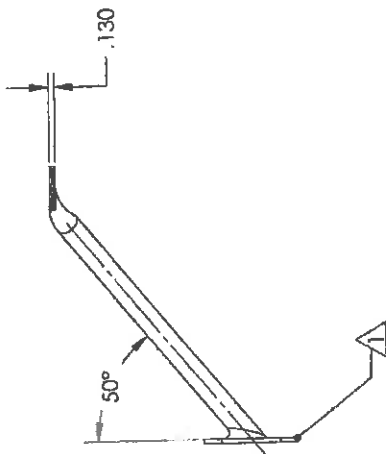
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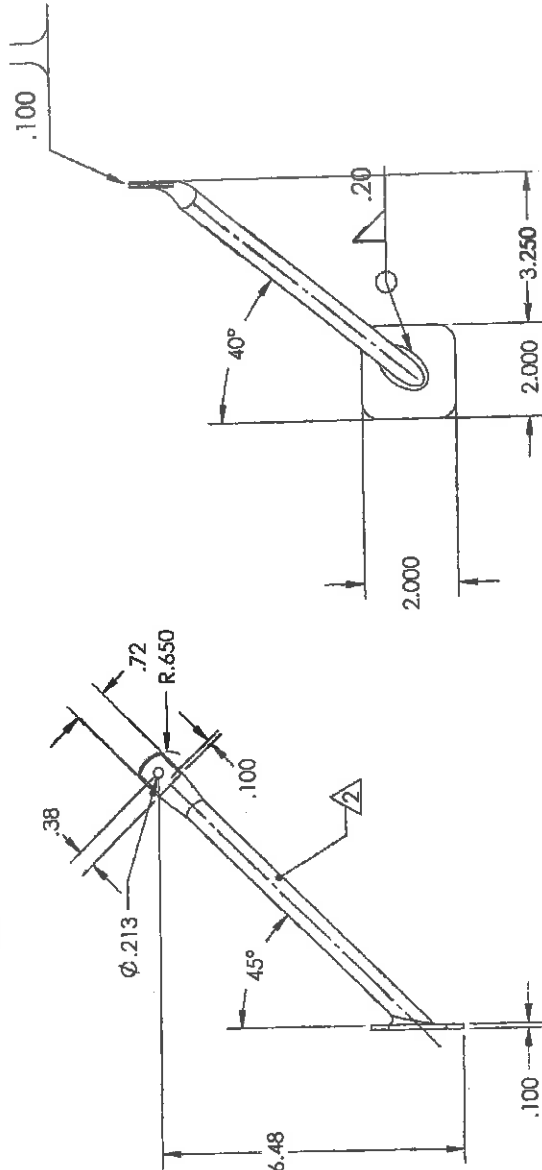
3

2

1



646.3512 SHOWN  
646.3513 OPPOSITE



|                                        |  |                                           |  |
|----------------------------------------|--|-------------------------------------------|--|
| APICAL INDUSTRIES                      |  | STRUT                                     |  |
| 2608 TERRY HEIGHTS DR.                 |  | 646.3500                                  |  |
| OCEANSIDE, CA. 92056-3512              |  | N/C                                       |  |
| SCALE: NONE                            |  | SHEET 3 OF 2                              |  |
| DRAWN BY: J. B. BAKER                  |  | CHECKED BY: J. B. BAKER                   |  |
| DESIGNED BY: J. B. BAKER               |  | DATE: 10/10/86                            |  |
| MATERIAL: 304 STAINLESS STEEL          |  | FINISH: POLISHED                          |  |
| TOLERANCES: UNLESS OTHERWISE SPECIFIED |  | DIMENSIONS: IN UNLESS OTHERWISE SPECIFIED |  |
| FRACTIONS: 16ths                       |  | DECIMALS: 3 Places                        |  |
| ANGLES: 10' MIN.                       |  | RADIUS: .001                              |  |





Entered: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only

NCR No. \_\_\_\_\_

Job: \_\_\_\_\_

Part No. \_\_\_\_\_

### DISPOSITION

Rework ☐  
Scrap ☐  
Use-as-is ☐

### DEPARTMENT/PROCESS

Skid-tube ☐  
Machining ☐  
Large Fab ☐

Cross tube ☐  
Small Fab ☐  
Finishing ☐

Eng. (Non-AW) ☐  
Prod. Eng. Coord. ☐  
Rec/Store/Packaging ☐

Engineering ☐  
Water Jet ☐  
Supplier ☐  
Quality ☐

Date: \_\_\_\_\_

Sequence #: \_\_\_\_\_

QTY Affected: \_\_\_\_\_

MRB (QS1042)

### Description Work Order Deviation

### Disposition

Completed By \_\_\_\_\_

Lead hand / Supervisor \_\_\_\_\_

QC / QA Coordinator \_\_\_\_\_

### Root Cause

Operator ☐  
Manufacturing Process ☐  
Equip/Tooling ☐  
Handling/Preservation ☐  
Material ☐  
Product Improvement ☐  
Process Improvement ☐  
Human Factors ☐

### FAULT CATEGORY

Pressure/Forced ☐  
Bending ☐  
Crushing ☐  
Cracks ☐  
Crimp/Kink/Ripple/Wave/Twist ☐  
Marks/Chatter ☐  
Mislabeled ☐  
Contamination ☐  
Misaligned/off center ☐  
BOM/Route ☐  
Broken/Damage/Defect ☐  
Incomplete/Unclear Instructions ☐  
Drill Holes ☐  
Fit/Function ☐

Power Loss/Surge ☐  
Folio/Program ☐  
Grain Direction ☐  
Weld ☐  
Wrong Stock Pulled ☐  
Out of Sequence ☐  
Off-set/Set-up ☐  
Positioned Wrong ☐  
Outside Tolerance ☐  
Drawing ☐  
Finish ☐  
Part Lost/Missing ☐  
Misread ☐

Other/Details: \_\_\_\_\_